

ABSTRACT OF THE DISCLOSURE

The invention provides a method and system for integrating a CAM-based ASIC that will allow lookups to keep up with transmission speeds over optical fibers. The lookup table includes chips with CAM banks. Each chip contains entries from only a certain range of the address space, within each chip the entries are divided into several banks. Each bank contains entries of the same prefix length. Depending on the number of entries in each prefix length on each chip several banks may be required to store these entries. Each bank contains entries contained in a particular address range. Each address lookup will activate one bank per prefix length in order to get a match. A Content Comparable Memory (CCM) is contained within each CAM bank; this CCM stores and compares the least possible address that will match the entries in the table with the incoming address. If the incoming address is found to be greater or equal to the data stored in the CCM but less than the data in the next bank's CCM which contains addresses of the same prefix length, the incoming address will be directed to the rest of the CAM bank for comparison.